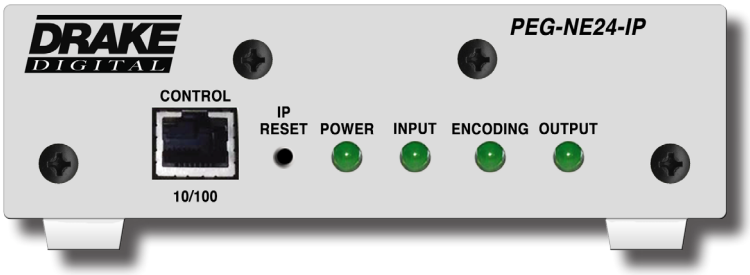
PEG-NE24-IP & PEG-NE24-IP-C Models

Public Educational & Governmental Access Encoder

INSTRUCTION MANUAL



Model	Item #	Description
PEG-NE24-IP	1002606	HD PEG Channel Encoder with HD-SDI Input and IP Output
PEG-NE24-IP-C	1002613	HD PEG Channel Encoder with HD-SDI or Composite Video Input with L/R Audio and IP Output

937-746-4556

www.rldrake.com

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Rev: 091515 / 651237100C

We recommend that you write the following information in the spaces provided below.

Purchase Location Name:	
Purchase Location Telephone Number:	
PEG-NE24 Serial Number:	

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Reverse engineering or disassembly is prohibited.

Manual Revision

This instruction manual was updated on 08/07/15 to be current for PEG encoders having firmware release Version 2.0.1

- Some of the new features added on this F/W release include:
- Provision for licensing additional add-on features.
- Added ability to stream from Control Port with SFP off.
- Improved robustness towards SDI sources with invalid audio phase information.
- Closed Captioning bug fixed.
- Status reporting for fiber SFP modules fixed.
- VLAN tag values now supported from 1 to 4095 (upper limit was 255).

Version 1.9.1

- Added ability to change aspect ratio settings
- MPEG-2 video streams will now be closed-GOP
- MPEG-4/h.264 streams will contain IDR frames
- The SNMP ".mib" file can be downloaded from the Log page.
- All PID and program numbers on advanced settings page are displayed in hexadecimal and decimal notation.

For more information regarding product firmware releases, please visit our website at www.rldrake.com or contact Technical Assistance at 937-746-6990.

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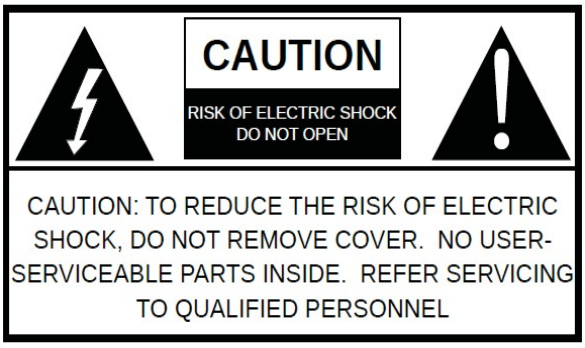
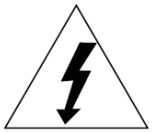
Caution Statements

Caution Statements:

WARNING: TO PREVENT FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE TO RAIN OR MOISTURE.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL

A product and cart combination should be moved with care.
Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.



The **lightning flash with arrow head symbol, within an equilateral triangle**, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING: THE SOCKET-OUTLET SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT OPEN THE CABINET, REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Important Safety Instructions

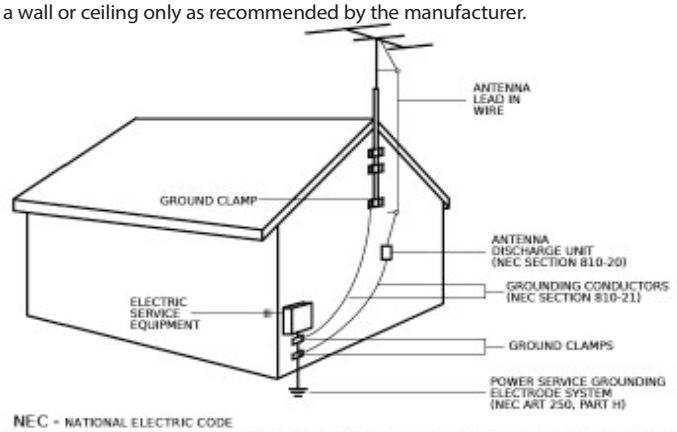
1. **Read Instructions:** All the safety and operating instructions should be read before the product is operated.
2. **Retain Instructions:** The safety and operating instructions should be retained for future reference.
3. **Heed Warnings:** All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Instructions:** All operating and use instructions should be followed.
5. **Cleaning:** Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleansers. Use a damp cloth for cleaning.
6. **Attachments:** Do not use attachments that are not recommended by the product manufacturer as they may cause hazards.
7. **Water and Moisture:** Do not use this product near water—for example, near a bathtub, wash bowl, kitchen sink or laundry tub; in a wet basement; or near a swimming pool; and the like.
8. **Accessories:** Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. **Ventilation:** Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or similar surface. This product should not be placed in a built-in installation such as bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. **Power Sources:** This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the product's operating instructions.
12. **Grounding or Polarization:** This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternate Warnings – If this product is equipped with a three-wire grounding- type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

Safety Instructions continued...

13. **Outdoor Antenna Grounding: If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.**
14. **Power-Cord Protection:** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
15. **Lightning:** For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16. **Power Lines:** An outside antenna system should not be located in the vicinity of overhead power lines, other electric light or power circuits, where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them may be fatal.
17. **Overloading:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. **Object and Liquid Entry:** Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. **Servicing:** Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. **Damage Requiring Service:** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a) When the power-supply cord or plug is damaged,
    b) If liquid has been spilled, or objects have fallen into the product,
    c) If the product has been exposed to rain or water,
    d) If the product does not operate normally by following the operating instructions.

    Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation, e. If the product has been dropped or damaged in any way, and f. When the product exhibits a distinct change in performance—this indicates a need for service.
21. **Replacement Parts:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutes may result in fire, electric shock or other hazards.
22. **Safety Check:** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. **Wall or Ceiling Mounting:** The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

NOTE TO CABLE INSTALLER:
THIS REMINDER IS PROVIDED TO CALL THE CATV SYSTEM INSTALLER'S ATTENTION TO ARTICLE 820-40 OF THE NEC THAT PROVIDES GUIDELINES FOR PROPER GROUNDING AND, IN PARTICULAR, SPECIFIES THAT THE CABLE GROUND SHALL BE CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING, AS CLOSE TO THE POINT OF CABLE ENTRY AS PRACTICAL.


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
GROUNDING CONDUCTORS (NEC SECTION 810-21)
ELECTRIC SERVICE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

NEC - NATIONAL ELECTRIC CODE

Example of antenna grounding as per National Electrical Code, ANSI/NFPA 70

Specifications

PEG-NE24-IP Item # 1002606

HD PEG Encoder with HD-SDI Input, and IP Output

INTERFACE

VIDEO INPUTS:	SD/HD-SDI BNC Type Input Connection Closed Caption Support (embedded only)
AUDIO INPUTS:	SD/HD-SDI with PCM Embedded Audio

VIDEO OPTIONS

INPUT VIDEO MODES:	480i (640x480/720x480 @ 30FPS) 720p (1280x720 @ 60FPS) 1080i (1920x1080 @30FPS) AUTO-SCAN for Input Resolution
VIDEO FORMAT:	MPEG-2 OR H.264
H.264 PROFILE SUPPORT:	Baseline, Main, High

AUDIO OPTIONS

ENCODER FORMAT:	Dolby® Digital, AAC or MPEG1-Layer 2
OUTPUT BITRATE:	128, 192, 320 or 384 Kbps

NOTE: 320kbps is an option for audio bitrate in MP2 and AAC only

Manufactured under license from Dolby Laboratories

OUTPUT

VIDEO OUTPUT:	SFP Port IP SPTS (SFP module is required)
PACKET FORMAT:	UDP SPTS (1xHD, 1xSD)

PHYSICAL SPECIFICATIONS

TEMPERATURE RATING:	0 - 50° C Ambient
FORM FACTOR:	Desktop Modulator
DIMENSIONS:	Approximately 7.5” D X 1.15” H X 3.5” W
WEIGHT:	1.15 lbs
POWER REQUIREMENTS:	100-120 VAC/60 Hz for supplied AC adapter

PEG-NE24-IP-C Item # 1002613

HD PEG Encoder with HD-SDI or Composite Video with L/R Audio Input, and IP Output

INTERFACE

VIDEO INPUTS:	SD/HD-SDI BNC Type Input Connection Composite Video RCA Input Connector Closed Caption Support
AUDIO INPUTS:	SD/HD-SDI with PCM Embedded Audio Analog Audio (L, R) 2xRCA Input Connectors

VIDEO OPTIONS

INPUT VIDEO MODES:	480i (640x480/720x480 @ 30FPS) 720p (1280x720 @ 60FPS) 1080i (1920x1080 @ 30FPS) AUTO-SCAN for Input Resolution
VIDEO FORMAT:	MPEG-2 OR H.264
VIDEO ADJUSTMENTS:	Brightness, Contrast, Hue, Saturation
H.264 PROFILE SUPPORT:	Baseline, Main, High

AUDIO OPTIONS

ENCODER FORMAT:	Dolby® Digital, AAC or MPEG1-Layer 2
OUTPUT BITRATE:	128, 192, 320 or 384 Kbps

NOTE: 320kbps is an option for audio bitrate in MP2 and AAC only'

Manufactured under license from Dolby Laboratories

OUTPUT

VIDEO OUTPUT:	SFP Port IP SPTS (SFP module is required)
PACKET FORMAT:	UDP SPTS (1xHD, 1xSD)

PHYSICAL SPECIFICATIONS

TEMPERATURE RATING:	0 - 50° C Ambient
FORM FACTOR:	Desktop Modulator
DIMENSIONS:	Approximately 7.5” D X 1.15” H X 3.5” W
WEIGHT:	1.15 lbs
POWER REQUIREMENTS:	100-120 VAC/60 Hz for supplied AC adapter

Optional SFP Plug-ins (1000 BT copper)

STOCK#	MODEL	DESCRIPTION
1002620	SFP-C-10/100/1000 TRANSCEIVER	10/100/1000BASE-T SFP, RJ-45, 100M, COPPER
1002621	SFP-MM-850-550M	1000BASE-SX SFP, 850NM, 550M, MMF, DDM
1002622	SFP-SMF-1310-10KM	1000BASE-LX SFP, 1310NM, 10KM, SMF, DDM
1002623	SFP-SMF-1550-80KM	1000BASE-ZX SFP, 1550NM, 80KM, SMF, DDM
1002624	SFP-SMF-CWDM-1470NM-80KM	1.25GBASE-CWDM-SFP, 1470NM, 80KM, SMF, DDM
1002625	SFP-SMF-CWDM-1490NM 80KM	1.25GBASE-CWDM-SFP, 1490NM, 80KM, SMF, DDM
1002626	SFP-SMF-CWDM-1510NM-80KM	1.25GBASE-CWDM-SFP, 1510NM, 80KM, SMF, DDM
1002627	SFP-SMF-CWDM-1530NM-80KM	1.25GBASE-CWDM-SFP, 1530NM, 80KM, SMF, DDM
1002628	SFP-SMF-CWDM-1550NM-80KM	1.25GBASE-CWDM-SFP, 1550NM, 80KM, SMF, DDM
1002629	SFP-SMF-CWDM-1570NM-80KM	1.25GBASE-CWDM-SFP, 1570NM, 80KM, SMF, DDM
1002630	SFP-SMF-CWDM-1590NM-80KM	1.25GBASE-CWDM-SFP, 1590NM, 80KM, SMF, DDM
1002631	SFP-SMF-CWDM-1610NM-80KM	1.25GBASE-CWDM-SFP, 1610NM, 80KM, SMF, DDM
1002632-XX	SFP-SMF-DWDM-CHXX-40KM	1.25GBASE-DWDM-SFP, CH. 20-59 ,40KM, SMF, DDM
1002633-XX	SFP-SMF-DWDM-CHXX-80KM	1.25GBASE-DWDM-SFP, CH. 20-59, 80KM, SMF, DDM
Last 2 numbers indicate channel number (20-59).		

Specifications, price, and availability are subject to change without notice or obligation.

Installation & Power-Up

Unpacking

You will find the following items in the box:

- PEG Encoder Unit (QTY = 1)
- Power Adapter (QTY = 1)

Installation

The PEG Encoder is designed to be mounted on a desk-top or table-top in the close proximity to a 120 VAC – 60 HZ power plug.

For safe and reliable operation, do not place objects within 1 inch of the unit that block airflow.

Power-Up

Plug the Power Adapter into a power plug (120 VAC – 60 HZ). Plug the power pin into the back of the PEG unit at the input marked “DC Power”.

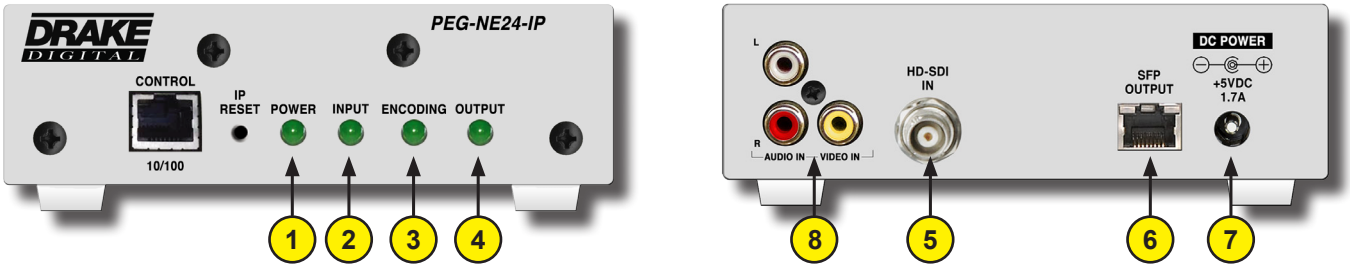
For safe and reliable operation, only use the power adapter supplied with the PEG encoder.

General Description & Features

The PEG-NE24-IP/PEG-NE24-IP-C is a High Definition (HD)/Standard Definition (SD) video encoder with IP output. The PEG encoder has two IP output streams available, one HD or SD and one SD based on the Composite or HD/SD-SDI input source resolution. For each output stream, UDP is encapsulated SPTS (single program transport stream). The PEG-NE24 is controlled through a web page interface. The web page provides remote monitoring and updating capabilities and SNMP traps for status updates.

- Encodes a HD & SD stream of the same content in either MPEG-2 or H.264 formats
- Optional In-band management with VLAN support on SFP output
- GUI-based menu for local & remote configuration (Password Protected)
- Configuration and shutdown control via HTTP server UI and programmable API
- Unicast or Multicast is defined by the IP address
- Provides Null Packet stuffing up to 25 Mbps
- Compositing allows rendering static images over video frames
- Supports PNG images including alpha channel/transparency

Front and Rear Panel Operation



FRONT PANEL

1. **Ethernet Control:** 10/100 Ethernet wired connection for local and remote management
2. **IP Reset Button:** When pressed for >2 seconds, the IP address of the control port will enable to the default factory IP address (172.16.70.1, **Subnet Mask** 255.255.255.0) The login credentials will also be enabled to the default username **admin** and password **pass**.

   Note: The old IP address, login, and password will still be present in the encoder settings.
3. **Status LEDs:** Provides a status of tasks performed by the PEG encoder in real-time:
   - (1) **Power:** The LED is illuminated when the power is ON.
   - (2) **Input:** The LED is illuminated when input video is being received from the HD/SD SDI or Composite input.
   - (3) **Encoding:** The LED is illuminated when the internal encoder is operational.
   - (4) **Output:** The LED is illuminated when the copper or optical SFP is connected to a network.

REAR PANEL

- (5) **HD-SDI IN:** Digital video HD/SD SDI input source
- (6) **SFP Ethernet Output:** Optical or Copper SFP IP video and audio output
- (7) **5VDC Power Port:** Accepts five-volt power to the device
- (8) **NTSC Composite Video/Audio In:** Analog video with Left and Right Audio. PEG-NE-24-IP-C model only.

Login Screen

First, connect the appropriate input and output video cables and plug in the PEG-NE24 power cable.

ETHERNET ACCESS:

Local or remote communication with the unit is only possible through a GUI-based menu via any standard web browser Chrome or Firefox is recommended, for IE use IE8 minimum. Before you can communicate with the unit you must configure your computers Local Area Network connection to confirm with the PEG default IP of 172.16.70.1. To do so, follow these steps:

Connect an Ethernet cable from your computer to the Control 10/100 port of the PEG.

1. The following steps explain how to do this for a computer with **Windows XP** operating software:

a) On your computer, open the "Control Panel"
b) Double-click on "Network Connections"
c) Right-click on the "Local Area Connection", and then click on the "properties".
d) A dialog box entitled "Local Area Connection Properties" will appear. In this box, double-click on the "Internet Protocol (TCP/IP)".
e) A dialog box entitled "Internet Protocol (TCP/IP) Properties" will appear. Select the "Use the following IP address" option and enter the following addresses:

IP address: 172.16.70.2
Subnet mask: 255.255.255.0
No need to enter a value for the **Default Gateway**.

Click OK to close the dialog box. Now your computer is ready to communicate with the unit.

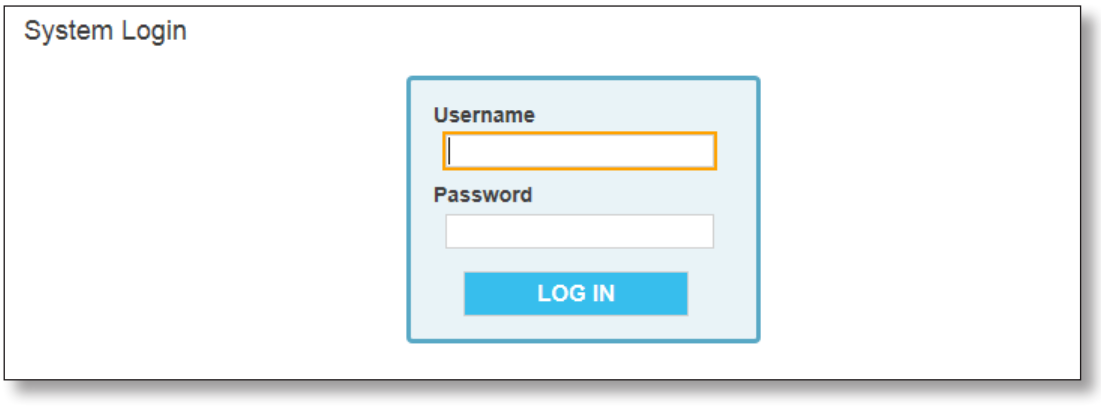
2. The following steps explain how to do this for a computer with **Windows 7** operating software:

a) On your computer, open the "Control Panel"
b) Click on “Network and Internet”
c) Click on the "View network status and tasks"
d) Click on “Change Adapter Settings” on left hand side of the window
e) Right-click on the "Local Area Connection", and then click on the "Properties".
f) A dialog box entitled "Local Area Connection Properties" will appear. In this box, double-click on the "Internet Protocol Version 4 (TCP/IPv4)".
g) A dialog box entitled "Internet Protocol Version 4 (TCP/IPv4) Properties" will appear. Select the "Use the following IP address" option and enter the following addresses:

IP address: 172.16.70.2
Subnet mask: 255.255.255.0
No need to enter a value for the **Default Gateway**.

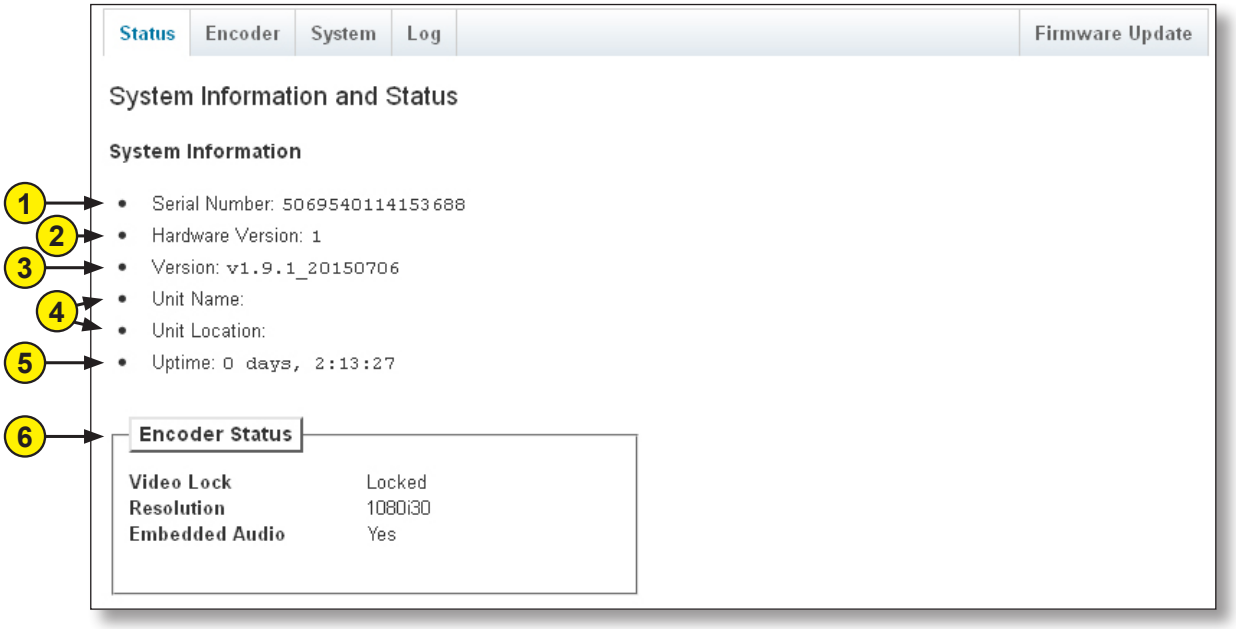
Click OK.

Open a web browser on your computer and enter the following URL address (http://172.16.70.1). Once the PEG web server has been loaded from your browser, you should see the login dialog. Enter the username and password and click LOG IN. The default username is "**admin**" (in lower case letters) and the default password is "**pass**" (in lower case letters).



Status Tab

The status tab provides the following information (View only):



1. The serial number indicates serial number of PEG encoder
2. The hardware version indicates the hardware version of the PEG encoder
3. Indicates the software version of the unit
4. Indicates user-defined unit constants (Name and Location)
5. The Uptime of the unit (days, hours, minutes, and seconds), which can be set on the System tab under Unit Description.
6. Primary Channel Status Box:

   Video Lock: Indicates if the video is present and locked

   Resolution: Indicates the resolution of the source video. The PEG encoder supports resolutions of:

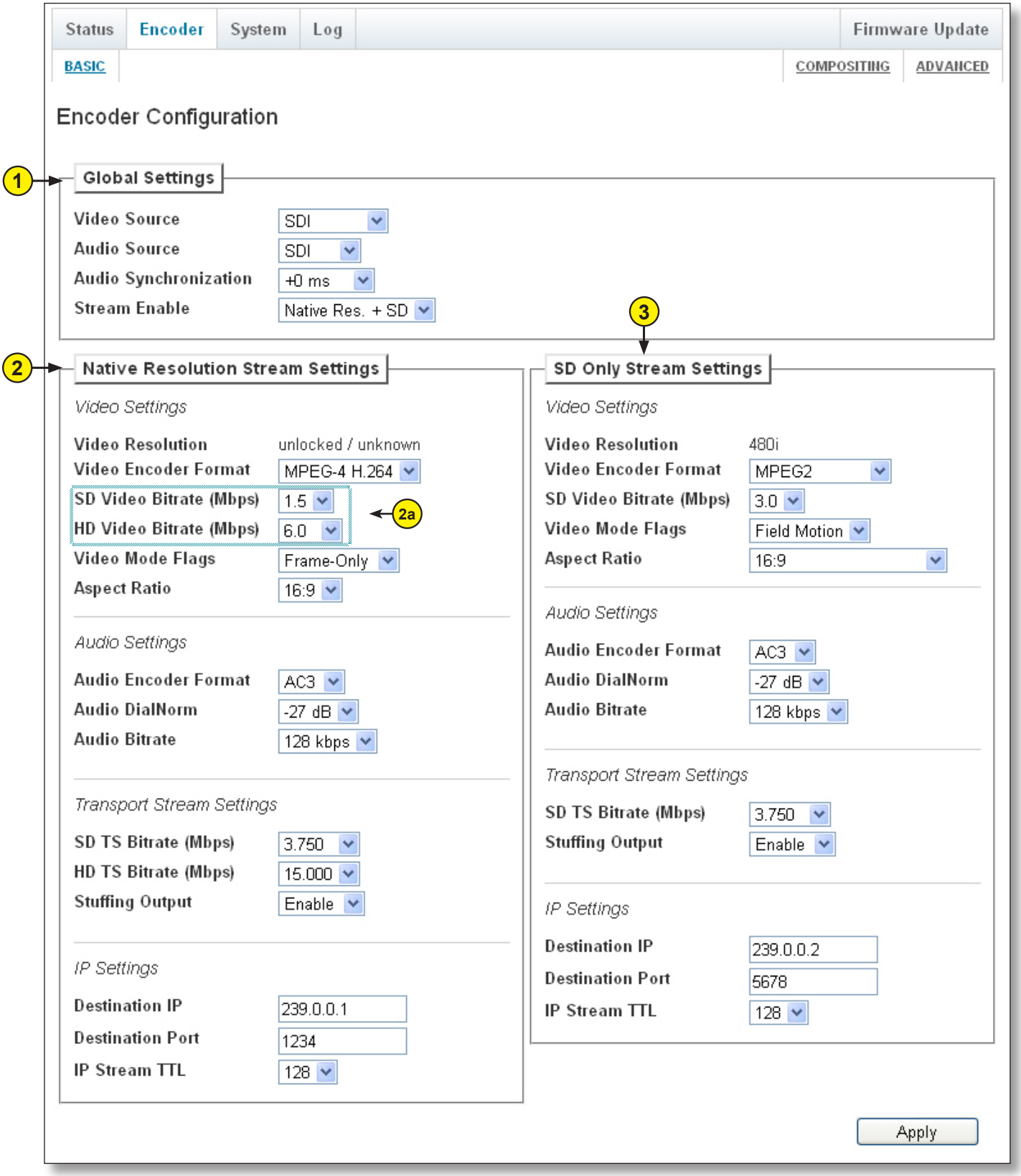
   480i (640x480/720x480 @ 30FPS)

   720p (1280x720 @ 60FPS)

   1080i (1920x1080 @ 30FPS)

   Embedded Audio: Indicates if there is embedded audio on the stream

Encoder Tab


Status
Encoder
System
Log
Firmware Update
BASIC
COMPOSITING
ADVANCED
Encoder Configuration
1
Global Settings
Video Source
SDI
Audio Source
SDI
Audio Synchronization
+0 ms
Stream Enable
Native Res. + SD
3
2
Native Resolution Stream Settings
Video Settings
Video Resolution
unlocked / unknown
Video Encoder Format
MPEG-4 H.264
SD Video Bitrate (Mbps)
1.5
HD Video Bitrate (Mbps)
6.0
2a
Video Mode Flags
Frame-Only
Aspect Ratio
16:9
Audio Settings
Audio Encoder Format
AC3
Audio DialNorm
-27 dB
Audio Bitrate
128 kbps
Transport Stream Settings
SD TS Bitrate (Mbps)
3.750
HD TS Bitrate (Mbps)
15.000
Stuffing Output
Enable
IP Settings
Destination IP
239.0.0.1
Destination Port
1234
IP Stream TTL
128
SD Only Stream Settings
Video Settings
Video Resolution
480i
Video Encoder Format
MPEG2
SD Video Bitrate (Mbps)
3.0
Video Mode Flags
Field Motion
Aspect Ratio
16:9
Audio Settings
Audio Encoder Format
AC3
Audio DialNorm
-27 dB
Audio Bitrate
128 kbps
Transport Stream Settings
SD TS Bitrate (Mbps)
3.750
Stuffing Output
Enable
IP Settings
Destination IP
239.0.0.2
Destination Port
5678
IP Stream TTL
128
Apply

Encoder Tab

Allows the user to set Global, Primary Steam, SD-only Stream Settings for their PEG encoder.

1 **Global Settings:** Sets global settings that apply to both streams and the possible outputs

Video Source: Displays only on PEG-NE24-IP-C model. Video input selection of SDI or Composite. PEG-NE24 IP is SDI input only.

Audio Source: Displays only on PEG-NE24-IP-C model. Audio input selection of SDI or Analog (L/R). PEG-NE24-IP is SDI input only.

Audio Synchronization: A/V lip-sync adjustment used to adjust your audio to video synchronization. For example, you may need to delay or lag your audio if your video input is SDI and your audio source is analog.

Stream Enable: Stream combinations available.

Disable: Encoder is not streaming

Native: Encoder is streaming HD or SD stream depending on the video input HD or SD source.

SD Only: The encoder is streaming a SD stream no matter if the encoder input is HD or SD source.

Native + SD: Encoder is streaming a HD and SD stream or a SD stream and SD stream depending on your video input HD or SD source.

2 **Native Resolution:** The Primary stream settings sets parameters for streaming HD or SD stream depending on the video input HD or SD source.

Video Settings:

Video Encoder Format: MPEG-2 or MPEG-4/H.264

SD Video Bitrate (Mbps): 2 to 8 incremented by 0.1 in MPEG2, and 1 to 4 in H.264

HD Video Bitrate (Mbps) (Primary Stream Settings): 8.5 to 19.0 incremented by 0.1 in MPEG2 and 3.5 to 13.0 in H.264

2a **NOTE:** Once an input is applied, only the detected resolution will be displayed. Both SD & HD video bitrates are displayed only when no input is detected.

Video Mode Flag: Field-Motion, Frame-only, Field-only, adjusts video encoder modes for decoder compatibility

Field-Motion: Field encoding mode with algorithm enhancements to improve video quality. Use Field-Motion encoding mode to improve video quality when video input is interlaced, for example 480i or 1080i. Some decoders may have compatibility issues when decoding field encoding. Video quality test equipment readings may be inaccurate when using this mode.

Frame-Only: Frame encoding mode. Use Frame-Only mode when video input is progressive for example 720P. Frame-Only mode can be used to encode interlaced video, for example 480i or 1080i.

Field-Only: Field encoding mode. Use Field-Only mode when video input is interlaced for example 480i or 1080i. Some decoders may have compatibility issues when decoding field encoding.

NOTE: If the video input is 720P the encoding mode will automatically default to Frame-only mode, even if Field-Motion or Field-Only modes are selected in the menu.

Aspect Ratio: Affects only SD 480i inputs. Video display can be set for 4:3 (normal SD) or 16:9 (widescreen)

Encoder Tab

Audio Settings:

Audio Encoder Format: Select **MP2** for MPEG-1 Audio Layer 2; **AC-3** for Dolby Digital AC-3; **AAC** (Advanced Audio Coding)

Audio DialNorm: Adjustable from -1 to -31 dB. Provides meta-data for audio playback gain for Dolby AC-3 compression.

Audio Bitrate: 128, 192, 320 or 384 Kbps

NOTE: 320kbps is an option for audio bitrate in MP2 and AAC only

Transport Stream Settings:

SD TS Bitrate (Mbps): 2 to 25 incremented by .125

HD TS Bitrate (Mbps) (Primary Stream Settings): 0.415 to 25 incremented by 0.125 (TS bitrate must be greater than 0.400 Mbps + audio bitrate + video bitrate)

Stuffing Output: Enable or Disable, Enable will include transport stream null packet stuffing to produce a fixed-bitrate TS.

IP Settings:

Destination IP / Destination Port: User defined unicast or muliticast IP address and port number determined by downstream network connectivity device.

IP Stream TTL: 1 to 255, determined by application

3 **SD-only Stream Settings:** Provides a SD stream of the video input source.

Video Settings:

Video Encoder Format: MPEG-2 or MPEG-4/H.264

SD Video Bitrate (Mbps): 2 to 8 incremented by 0.1 in MPEG-2, and 1 to 4 in H.264

Video Mode Flag: Field-Motion, Frame-only, Field-only, adjusts video encoder modes for decoder compatibility

Field-Motion: Field encoding mode with algorithm enhancements to improve video quality. Use Field-Motion encoding mode to improve video quality when video input is interlaced, for example 480i or 1080i. Some decoders may have compatibility issues when decoding field encoding. Video quality test equipment readings may be inaccurate when using this mode.

Frame-Only: Frame encoding mode. Use Frame-Only mode when video input is progressive for example 720P. Frame-Only mode can be used to encode interlaced video, for example 480i or 1080i.

Field-Only: Field encoding mode. Use Field-Only mode when video input is interlaced for example 480i or 1080i. Some decoders may have compatibility issues when decoding field encoding.

NOTE: If the video input is 720P the encoding mode will automatically default to Frame-only mode, even if Field-Motion or Field-Only modes are selected in the menu.

Aspect Ratio: When native resolution is 720p or 1080i, the SD only output can be set as the following:

16:9	4:3 Squeeze - 640 x 480
4:3	4:3 Letterbox - 640 x 480
4:3 Letterbox - 720 x 480	4:3 Center - 640 x 480
4:3 Center - 720 x 480	

Encoder Tab

Audio Settings:

Audio Encoder Format: Select **MP2** for MPEG-1 Audio Layer 2; **AC-3** for Dolby Digital AC-3; **AAC** (Advanced Audio Coding)

Audio DialNorm: Adjustable from -1 to -31 dB. Provides meta-data for audio playback gain for Dolby AC-3 compression.

Audio Bitrate: 128, 192, 320 or 384 Kbps

NOTE: 320kbps is an option for audio bitrate in MP2 and AAC only

Transport Stream Settings:

SD TS Bitrate (Mbps): 2 to 25 incremented by .125

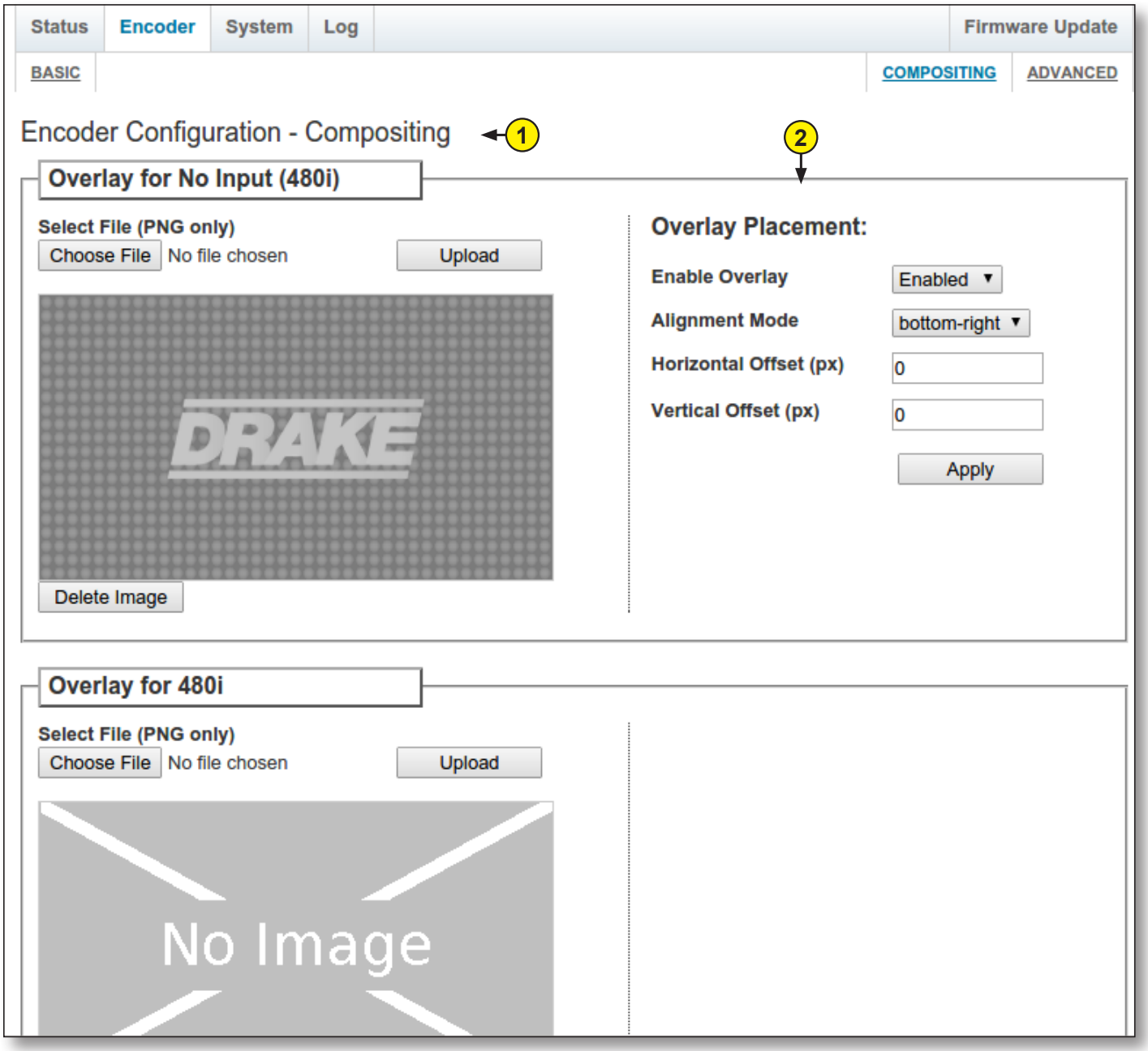
Stuffing Output: Enable or Disable; Enable will include transport stream null packet stuffing to produce a fixed-bitrate TS

IP Settings:

Destination IP / Destination Port: User defined unicast or muliticast IP address and port number determined by downstream network connectivity device.

IP Stream TTL: 1 to 255, determined by application

Compositing Screen



Compositing Screen

1. Compositing allows rendering static images over video frames before compression. It supports PNG images including alpha channel / transparency.
2. Displays only when an image file has been uploaded.

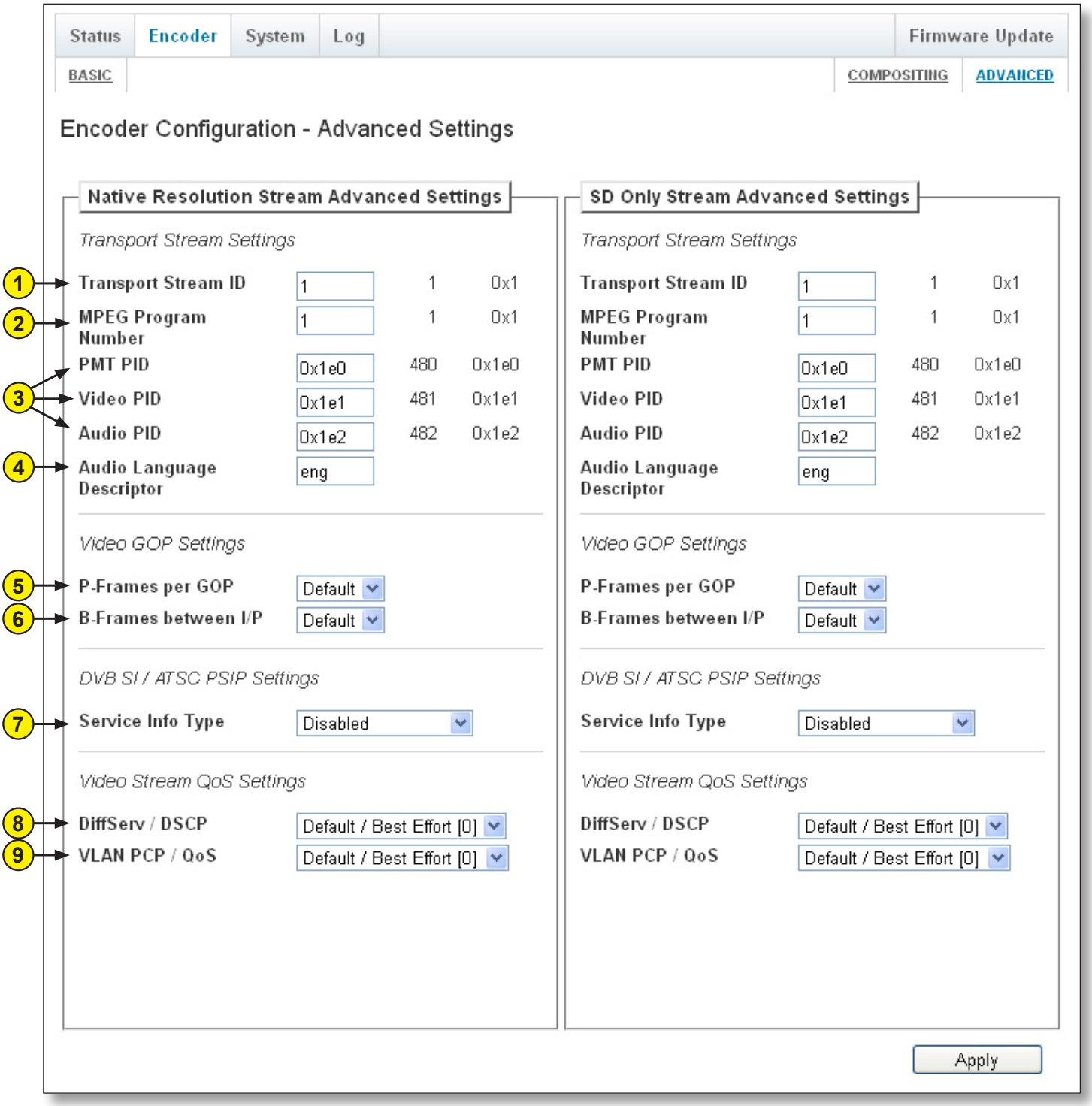
PLEASE NOTE:

1. It takes some time for the image to be uploaded via the web form, pre-processed (making the thumbnail, padding if necessary) and then loaded by the encoder. It takes about 8-10 seconds for a 720x480 image via gigabit LAN.

2. In addition to uploading the image, "Enable Overlay" under "Overlay Placement" on the right must be set to "Enabled".

3. "Overlay for No Input (480i)," the image resolution must be no larger than 720x480, "Overlay for (720p)," image resolution must be no larger than 1280x720, and "Overlay for (1080i)," image resolution must be no larger than 1920x1080.

Advanced Settings Screen



Advanced Settings Screen

User may configure the following previously fixed-value parameters:

1. **Transport Stream ID -** Configures the transport stream ID number used Program Specific Information (PSI) tables in the stream.
2. **MPEG Program Number -** Configures the MPEG Program used in all PSI tables for this stream.
3. **PMT, Video, and Audio PIDs:**
   - Configures the Packet Identifier (PID) used to transmit all Program Map Tables in the stream.
   - Configures the PID used to transmit Video and associated data.
   - Configures the PID used to transmit audio and associated data.

   All PIDs are displayed in Hex format. If you type a decimal format into the field, the GUI will automatically convert your decimal format to a Hex value. PIDs are expressed in both decimal & hex formats to the right of the entry field.
4. **Audio Language Descriptor -** Configures the ISO 639 audio language. Use 3-character "Alpha-3" code for this setting.
5. **P-Frames per GOP -** Specifies total number of P frames in a Group-of-Pictures (GOP).
6. **B-Frames between I/P-** Specifies number of B frames between each I or P frame in a GOP
7. **Service Info Type:**

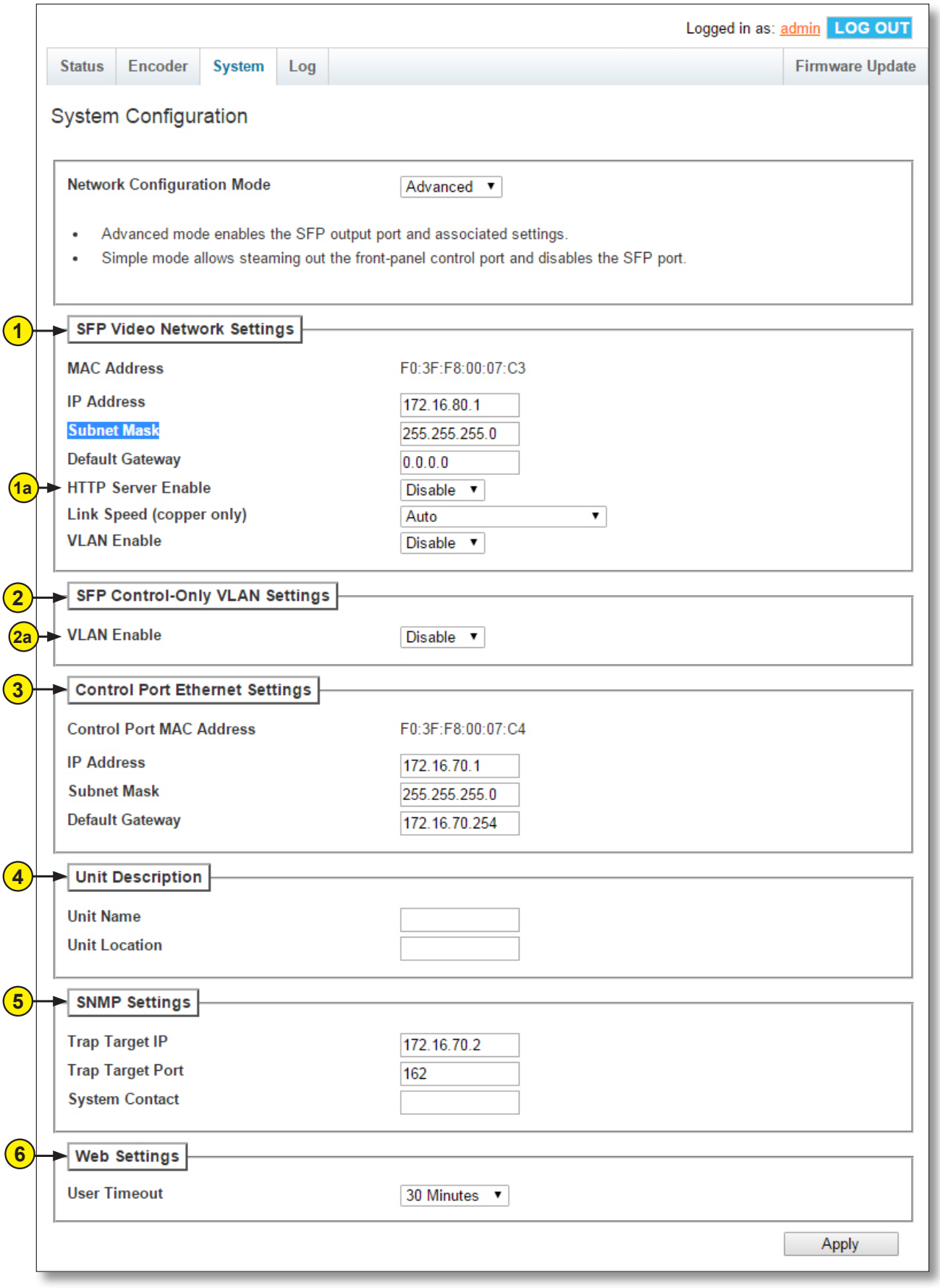
   If Service Info Type is set to "DVB (NIT+SDT)" it also enables the fields:
   - DVB Network Name - Specifies the "Network Name" in the DVB NIT table.
   - DVB Service Name - Specifies the "Service Name" in the DVB SDT table.
   - DVB Provider Name - Specifies the "Provider Name" in the DVB SDT table.

   If Service Info Type is set to "ATSC (MGT+VCT)":
   - VCT Short Name: 7-letter name for the channel.

   Major Channel Number / Minor Channel Number: Specifies the two-part channel number in the VCT, typically displayed in the format major-minor, for example "2-1".
8. **DiffServ / DSCP -** Configures the value of the differentiated services code point (DSCP) field in the IPv4 header for the video output stream. The format of this field is specified by IETF RFC2474, but actual values are specified by several related RFCs. The encoder does not support explicit congestion notification (ECN) which makes use of the lower 2 bits of this header field.
9. **VLAN PCP / QoS -** Configures the value of the Ethernet-frame level Priority Code Point in the IEEE802.1q VLAN tag as specified by IEEE 802.1p. This setting only applies when the SFP video network has VLAN tagging enabled.

   These values should be left at their default values unless the user has a specific reason to change them.

System Configuration Tab



System Configuration Tab

The system configuration tab allows the user to set Ethernet and SNMP settings

1. **SFP Video Network Settings** Mac Address, IP address, Subnet Mask, Default Gateway, and HTTP Server Enable

   1a. **SFP Port HTTP Server Enable, " Enabled":** This will allow management capability on the same SFP port (SFP port IP Address) as the streaming video.

2. **SFP Control-Only VLAN Settings:** Enable, Tag, IP address, Subnet Mask, and Default Gateway

   2a. **VLAN Enable, "Enable":** This will allow management capability on the same SFP port using VLAN IP address.

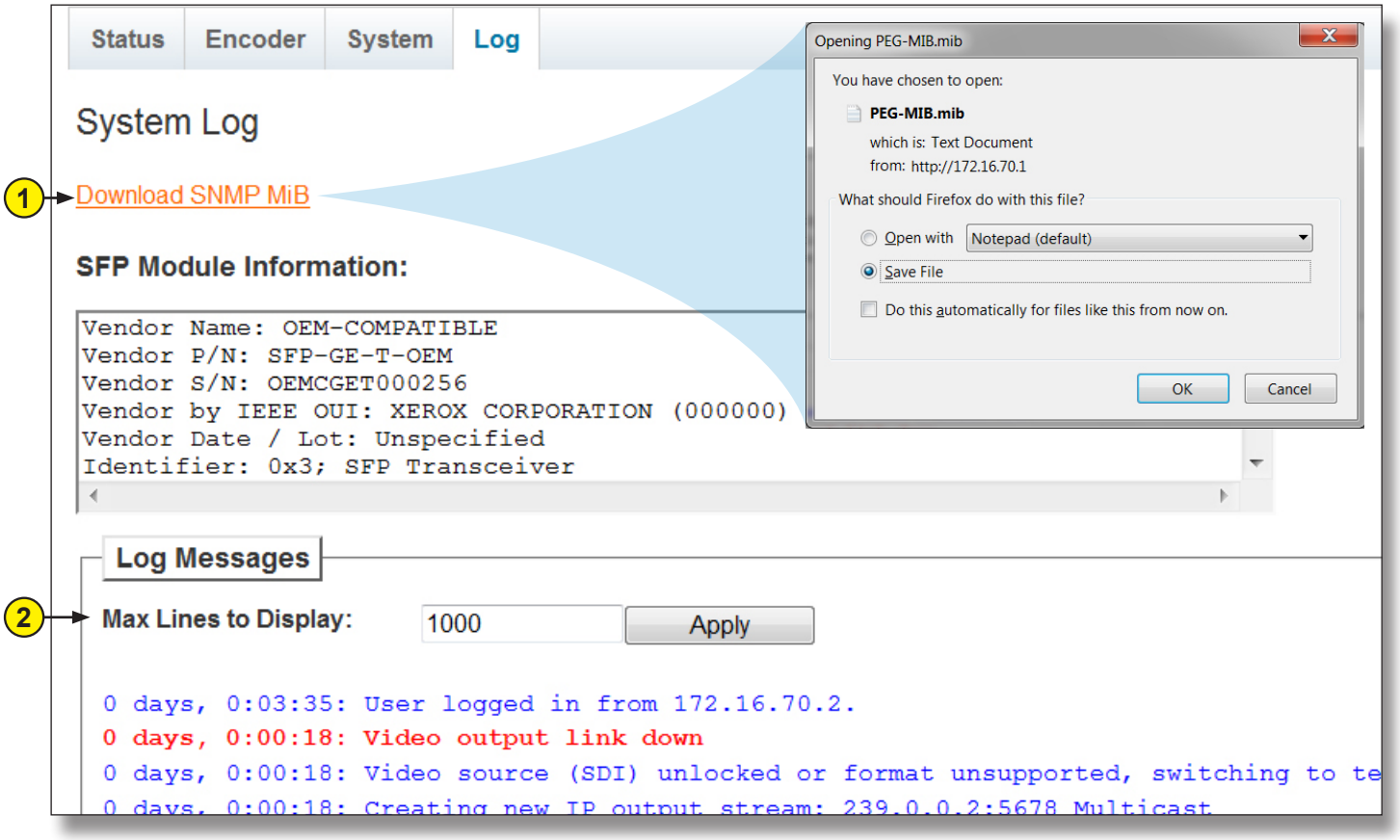
3. **Control Port Ethernet Settings:** Mac Address, IP address, Subnet Mask, and Default Gateway

4. **Unit Description:** Unit Name and User Location – User logged values

5. **SNMP Settings:** Trap IP address, Trap Target Port, System Contact

6. **Web Settings:** User Timeout- 5 minutes to 30 minutes

Log Screen

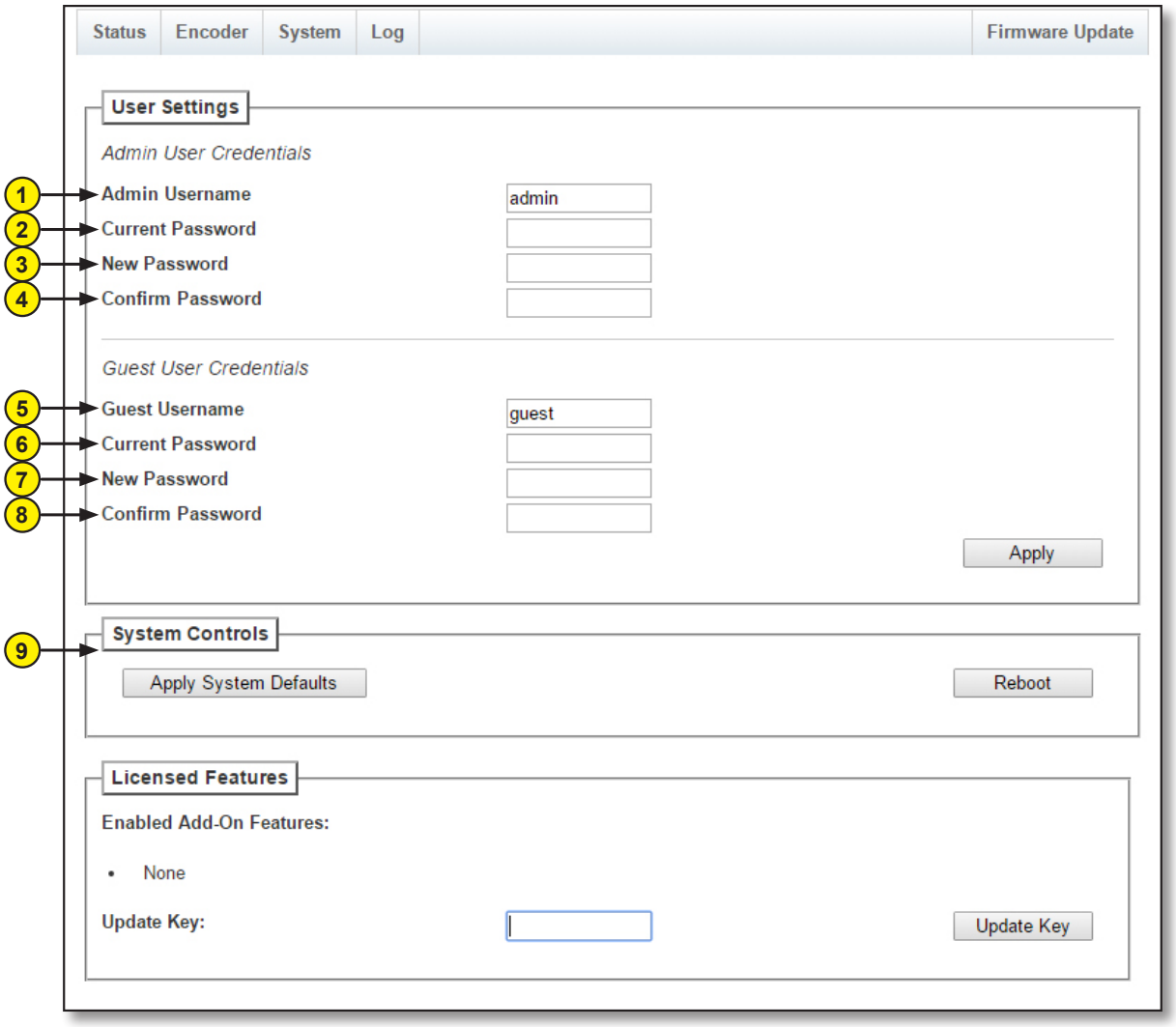


1 Click on the link to save the encoder's ".mib" file.

2 Max Lines to Display: Sets the maximum number of lines to display starting at the most recent.

Admin Screen

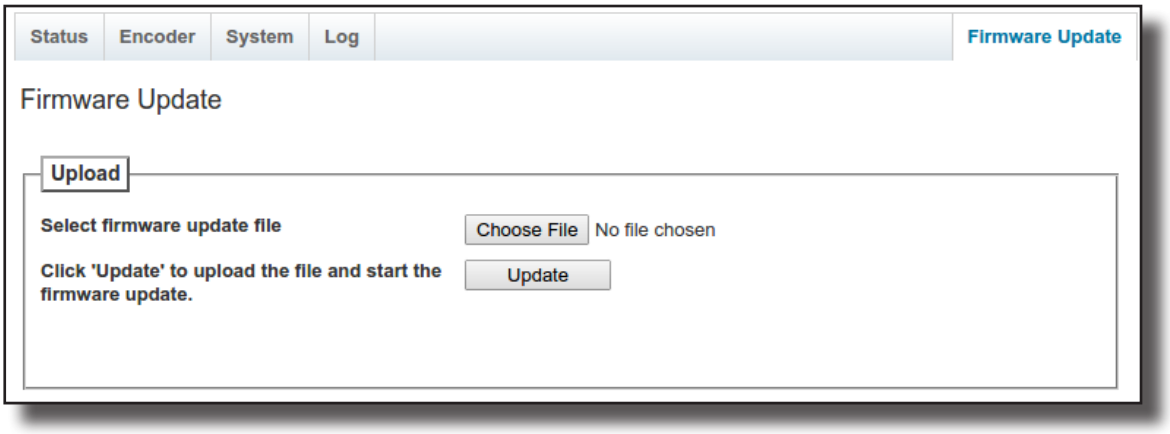
To change/modify the IP network parameters, as well as the Username and Password values for the unit, you must be logged in to the unit as “Admin” to access a hidden screen shown in image below. At the top right of the screen select Logged in as: admin



1. **Admin Username:** is the Administrator’s login (10 characters maximum). This login allows the user to make changes to any area of the unit. The factory default Login is “**admin**”. Login is case sensitive.
2. **Current Password:** is the Administrator’s Current Password (10 characters maximum). The factory default password is “**pass**”. Password is case sensitive and will not be displayed.
3. **New Password:** used only if the user wants to change the current Administrator’s password. Must enter a new password (10 characters maximum). Password is case sensitive and will not be displayed.
4. **Confirm Password:** must enter the same password as entered in 3 above. If password doesn't match, an error will be displayed.
5. **Guest Username:** is the Guest login (10 characters maximum). This login allows the user to view the unit settings but does not allow any changes. The factory default Guest Login is “**guest**”. Login is case sensitive.
6. **Current Password:** is the Current Guest Password (10 characters maximum). The factory default Guest password is “**pass**”. Password is case sensitive and will not be displayed.
7. **New Password:** used only if the user wants to change the current Guest password. Must enter a new password (10 characters maximum). Password is case sensitive and will not be displayed.
8. **Confirm Password:** must enter the same password as entered in 7 above. If password doesn't match, an error will be displayed.
9. **Licensed Features:** To enable optionally purchased add-on features, type in the License Key number provided by Drake and then click on the Update Key.

Firmware Update Tab

This tab uploads the newest available firmware for the PEG-NE24 and deploys firmware to the unit. While the firmware update tab is actively updating; the logging information and instructions are provided. When the update is completed, the unit will automatically reboot.



For latest firmware information:

Contact Drake Technical Assistance at 937-746-6990 or by Email: servicehelp@rldrake.com

NOTES:

Service

A Return Material Authorization (RMA) Number is required on ALL PRODUCT RETURNS (regardless of whether the product is being returned for repair or for credit). Product that is received at the factory without an RMA Number will be returned to the sender, unopened.

RMA Numbers must be used when returning product for credit or repair. Use of RMA Numbers will ensure efficient processing. When needing to return your product to R.L. Drake Holdings, LLC., please follow these simple steps listed below (in the order that they appear).

SERVICE REPAIRS ONLY

1. Contact R.L. Drake Holdings, LLC.'s Service Department in one of three ways:
   Phone: 732-313-4256
   Email: drakerepair@rldrake.com
   Fax: 732-679-4022
2. Request from Drake Service a copy of the Product Return Authorization Form.
3. Complete the Product Return Authorization Form fully.
4. Return the completed Product Return Authorization Form to the Drake Service Department using one of the contact methods listed in Step 1.
5. After completing Steps 1 through 4, an RMA Number will be assigned to you.
6. Securely pack the product and mark the box with your RMA Number. If shipping multiple boxes, all boxes must be marked with the RMA Number. Place the RMA Number near the return address in **large, bold print** (approx. 2" in height).

CREDIT RETURNS ONLY

1. Contact R.L. Drake Holdings, LLC.'s Service Department in one of three ways:
   Phone: 937-746-6990
   Email: servicehelp@rldrake.com
   Fax: 937-806-1510
2. Request from Drake Service a copy of the Product Return Authorization Form.
3. Complete the Product Return Authorization Form fully.
4. Return the completed Product Return Authorization Form to the Drake Service Department using one of the contact methods listed in Step 1.
5. After completing Steps 1 through 4, an RMA Number will be assigned to you.
6. Securely pack the product in its **original undamaged box** (returning the product without its original packaging in good, new condition may cause the incursion of additional fees). Pack this box within another shipping container or box. Mark the shipping box or container with your RMA Number. Place the RMA Number near the return address in **large, bold print** (approx. 2" in height).

Ship your "SERVICE REPAIR ONLY" return to:

R.L. Drake Holdings, LLC.
Attn: Product Service Returns
One Jake Brown Road
Old Bridge, NJ 08857

Ship your "CREDIT RETURNS ONLY" return to:

R.L. Drake Holdings, LLC.
Attn: Product Credit Returns
One Jake Brown Road
Old Bridge, NJ 08857

***NOTE: All Credit Returns are subject to a 15% Restock Fee**

***NOTE: All shipments are to be PRE-PAID by the sender. NO COD's will be accepted.**

IF YOU NEED TECHNICAL HELP

Call our Customer Service/Technical Support line at +1 (937) 746-6990 weekdays between 8:00 A.M. and 4:00 P.M. Eastern Standard Time. Please have the unit's serial number available. We will also need to know the specifics of any other equipment connected to the unit. When calling, please have the unit up and running, near the phone if possible. Our technician(s) will likely ask certain questions to aid in diagnosis of the problem. Also, have a voltmeter handy, if at all possible.

DRAKE also provides technical assistance by

Email: servicehelp@rldrake.com
Fax: (937) 806-1510

Many of the products that are sent to us for repair are in perfect working order when we receive them. For these units, there is a standard checkout fee that will be charged. Please perform whatever steps are applicable from the product's Instruction Manual before calling or writing as this could save unnecessary phone charges. Please do not return the product without calling Drake Service and following the steps above first; it is preferred to help troubleshoot the problem over the phone (or by Email) first, saving you both time and money.

Limited Warranty

Seller will at its sole option, either repair or replace (with a new or factory reconditioned product, as Seller may determine) any product manufactured or sold (or in the case of software, licensed) by Seller which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing: (i) for a period of three (3) years from the date of original purchase for all stock hardware products (other than those specifically referenced herein below having a shorter warranty period); (ii) for a period of one (1) year from the date of original purchase, with respect to all MegaPort™, IPTV products, test equipment and fiber optics receivers, transmitters, couplers and integrated receiver/distribution amplifiers; (iii) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed from Seller) with respect to all software products licensed from Seller (other than Core Product Software) that is (a) developed for a specific function or application, (b) complimentary to and does not function without the Core Product Software, and (c) listed with a specific model number and stock number in Seller's Price List ("**Non-Core Software**"); (iv) for a period of ninety (90) days from the date of original purchase, with respect to non-serialized products and accessories, such as parts, sub-assemblies, splitters and all other products sold by Seller (other than Core Product Software and Refurbished/Closeout Products) not otherwise referred to in clauses (i) through (iii) above. The warranty period for computer programs in machine-readable form included in a hardware product, which are essential for the functionality thereof as specifically stated in the published product specifications ("**Core Product Software**") will be coincident with the warranty period of the applicable hardware product within which such Core Product Software is installed.

Software patches, bug fixes, updates or workarounds do not extend the original warranty period of any Core Product Software or Non-Core Software.

Notwithstanding anything herein to the contrary,

(i) Seller's sole obligation for software that when properly installed and used does not substantially conform to the published specifications in effect when the software is first shipped by Seller, is to use commercially reasonable efforts to correct any reproducible material non-conformity (as determined by Seller in its sole discretion) by providing the customer with: (a) telephone or e-mail access to report non-conformance so that Seller can verify reproducibility, (b) a software patch or bug fix, if available or a workaround to bypass the issue if available, and (c) where applicable, replacement or damaged or defective external media, such as CD-ROM disk, on which the software was originally delivered;

(ii) Seller does not warrant that the use of any software will be uninterrupted, error-free, free of security vulnerabilities or that the software will meet the customer's particular requirements; and the customer's sole and exclusive remedy for breach of this warranty is, at Seller's option, to receive (a) suitably modified software, or part thereof, or (b) comparable replacement software or part thereof;

(iii) Seller retains all right, title and interest in and to and ownership of all software (including all Core Product Software and Non-Core Software) including any and all enhancements, modifications and updates to the same; and

(iv) in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller's products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller, will be of shorter duration or otherwise more limited than the standard Seller limited warranty. In such cases, Seller's warranty with respect to such third-party proprietary sub-assembly modules, third-party software and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, certain products, that are not manufactured by Seller, but are resold by Seller, may carry the original OEM warranty for such products, if any. The limited warranty set forth above does not apply to any product sold by Seller, which at the time of sale constituted a Refurbished/Closeout Product, the limited warranty for which is provided in the following paragraph.

Seller will at its sole option, either repair or replace (with a new or factory-reconditioned product, as Seller may determine) any product sold by Seller which at the time of sale constituted a refurbished or closeout item ("**Refurbished/Closeout Product**"), which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment of that product or fails to meet such other specifications as may have been expressly agreed upon in writing between the parties, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller will be of shorter duration or otherwise more limited than Seller limited warranty for Refurbished/Closeout Products. In such cases, Seller's warranty for Refurbished/Closeout Products constituting such third party proprietary sub-assembly modules, third party software, and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, notwithstanding the foregoing, (i) certain Refurbished/Closeout Products that are not manufactured (but are resold) by Seller, may carry the original OEM warranty for such products, if any, which may be longer or shorter than Seller's limited warranty for Refurbished/Closeout Products. All sales of Refurbished/Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt, serial number if applicable, or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to Seller at the following address: One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover failure of performance or damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) exposure to unusual physical or electrical stress, abuse or accident or forces or exposure beyond normal use within specified operational or environmental parameters set forth in applicable product specifications, (vi) lack of reasonable care or (vii) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

OTHER THAN THE WARRANTIES SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, AS TO THE CONDITION, DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR AS TO ANY OTHER MATTER, AND SUCH WARRANTIES SET FORTH ABOVE SUPERSEDE ANY ORAL OR WRITTEN WARRANTIES OR REPRESENTATIONS MADE OR IMPLIED BY SELLER OR BY ANY OF SELLER'S EMPLOYEES OR REPRESENTATIVES, OR IN ANY OF SELLER'S BROCHURES MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S SOLE OBLIGATION FOR ANY BREACH OF THE WARRANTIES CONTAINED HEREIN SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT F.O.B. SHIPPING POINT, AS SELLER IN ITS SOLE DISCRETION SHALL DETERMINE. SELLER SHALL IN NO EVENT AND UNDER NO CIRCUMSTANCES BE LIABLE OR RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE, DIRECT OR SPECIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE OR ANY OTHER LEGAL THEORY, ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, USE, INSTALLATION OR FAILURE OF ANY PRODUCT ACQUIRED BY BUYER FROM SELLER.

All claims for shortages, defects, and non-conforming goods must be made by the customer in writing within five (5) days of receipt of merchandise, which writing shall state with particularity all material facts concerning the claim then known to the customer. Upon any such claim, the customer shall hold the goods complained of intact and duly protected, for a period of up to sixty (60) days. Upon the request of Seller, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to Seller for examination by Seller's inspection department and verification of the defect. Seller, at its option, will either repair, replace or issue a credit for products determined to be defective. Seller's liability and responsibility for defective products is specifically limited to the defective item or to credit towards the original billing. All such replacements by Seller shall be made free of charge f.o.b. the delivery point called for in the original order. Products for which replacement has been made under the provisions of this clause shall become the property of Seller. Under no circumstances are products to be returned to Seller without Seller's prior written authorization. Seller reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of a contract of sale between Seller and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued. A copy of Seller's standard terms and conditions of sale, including the limited warranty, is available from Seller upon request. Copies of the limited warranties covering third-party proprietary sub-assembly modules and private-label products manufactured by third-parties may also be available from Seller on request. **(Rev 0713)**

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Sales: **937-746-4556** • Support: **937-746-6990** • Fax: **937-806-1510**

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